

Karel Cheat Sheet

Overview of Programming Functionality

Programming Mode 1

- `go ...` move one step forward. Note: If robot crashes into a wall, an error is thrown
- `right ...` turn 90 degrees right
- `left ...` turn 90 degrees left
- `get ...` pick up a gem. Note: There must be a gem beneath the robot, or an error is thrown
- `put ...` drops a gem on the ground. Note: Error is thrown if robot's bag is empty
- `repeat ...` repeat a command or sequence of commands a given number of times

Programming Mode 2

- `if - else ...` conditions
- `sensors ...` wall, gem, north, empty, home
- `not ...` negation
- `while ...` do something while condition is satisfied
- `def ...` define custom commands

Programming Mode 3

- `print ...` print command same as in Python
 - for example `print "Hello World!",` or `print "a =", a`
- `gpsx, gpsy ...` GPS coordinates, can be assigned to a variable
- integer and logical variables ... for example, `a = 0` creates a new variable `a` and initializes it with zero
- `inc(a), inc(a, value) ...` increase the value of variable `a` by one or value
- `dec(a), dec(a, value) ...` decrease the value of variable `a` by one or value
- `rand ...` returns randomly True or False
- `return ...` can be used in custom commands to return value
- `and, or ...` logical and, or to be used in conditions, while loops, and logical variables
- lists ... functionality related to lists is the same as in Python
 - `L = []` creates an empty list `L`
 - `len(L) ...` length of list `L`
 - `L[i] ...` item in list `L` at position `i`. Note: Indexing starts from zero
 - `L.append(x) ...` append item `x` at the end of list `L`
 - `x = L.pop() ...` remove the last item in list `L` and return it
 - `del L[i] ...` delete item at position `i` in list `L`